

ABSTRACT

The invention is a control system using microprocessors which communicate through a Local Area Network (private LAN) to control operation of both processors and input and output subsystems (IO system) of a multiprocessor computer system. The processors each have memory associated therewith, and each processor has an IO system comprising a plurality of busses such as PCI busses, associated therewith. The processors are cabled together in a mesh arrangement so that messages can be transferred between any of the processors and delivered to memory associated with the destination processor, or delivered to an IO system associated with the destination processor, etc. The microprocessors are powered on when power is applied to the chassis of the multiprocessor system, and the microprocessors then control the processors of the multiprocessor system, including applying power to the processors, forming hard partitions containing selected processors, computing routes from a processor to a memory associated with any processor for read and write transactions, computing routes to IO subsystems associated with any processor of the hard partition, forming partition boundaries so that processors in one hard partition cannot read and write to memory or IO systems associated with processors in another hard partition, forming soft partitions of processors, controlling boot-up of operating systems executing on the processors of the multiprocessor computer system, removing power from a failed processor, providing power to a repaired processor, etc.